Precision Strike:
Improving the Kill Chain

Precision Strike Association

Annual Programs Review

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PSA
Precision Strike Association

Precision Strike: *Improving the Kill Chain*

Precision Strike: Kill Chain

Key enabler: ***Command & Control***

- Situational Awareness
- Precision Targeting
- Standoff
- Response Time
- Precision Lethality

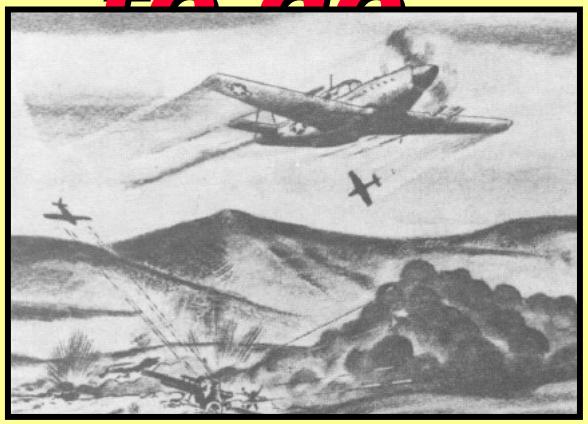
Precision: A Warhead on a Forehead

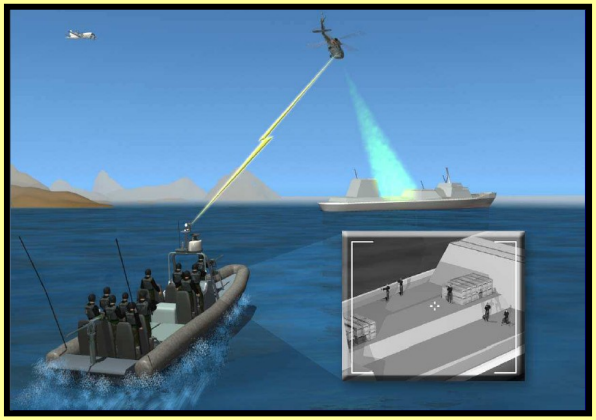
Precision Strike:
Improving the Kill Chain

Yesterday: ***Where we were***

Today: ***Where we are***

Tomorrow: ***Where we need to go***

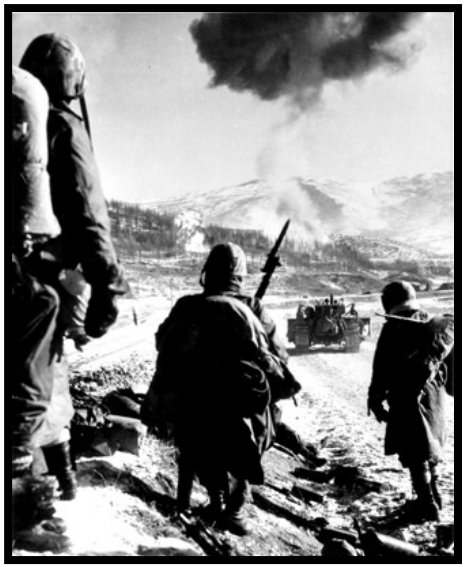




Yesterday: Where we were

- Slow & limited intelligence & SA
- Limited precision
- Limited standoff
- Very slow response time

- Dumb bombs
- Dumb aircraft
- Inaccurate coordinates
- Operator skill & luck



Quantity versus Quality

Today: Where we are

- Intel & SA vastly improved
- Precision effects desired / required
- Major improvement in LETHALITY
  - Precise & Precision weapons
    - JDAM, Laser guided weapons
    - Precision aircraft
    - Precision coordinate generation – in work
- Response time decreased

Enhanced success on non-moving targets

Today: Where we are

KILL CHAIN IMPROVEMENTS

- **Digital Communications / Targeting Systems**
  - **Accuracy, speed, coordinate pedigree**
  - ***TLDHS (Target Location Designation Handoff Sys)***
    → Near-instant data transmission & processing
- **3rd generation FLIR**
- **Real-time video downlinks**
- **UAVs**
  - **Real-time situational awareness**
  - **FACs: greater engagement range**
  - **Armed UAVs shorten kill chain**

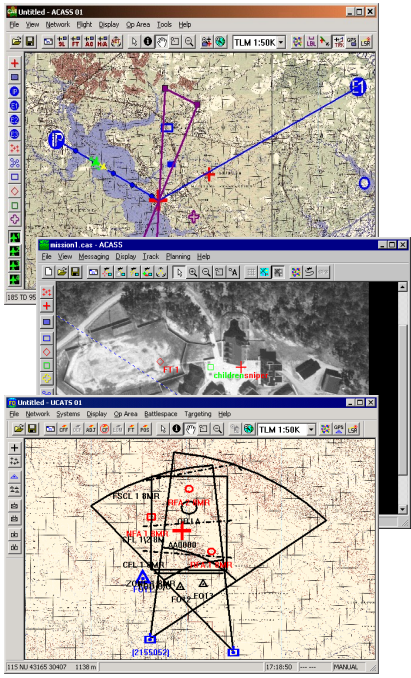
Significant progress – more needed

Target Location Designation and Handoff System

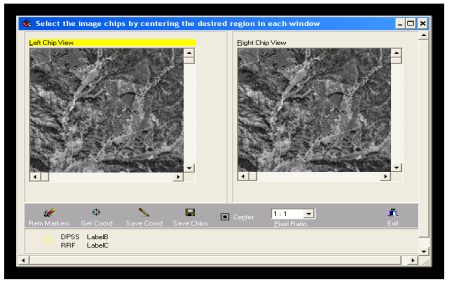
Digital Map & BFSA Overlays

TLDHS

- **USMC Today: Ground user to GPS weapons with NO human input**
- **Precision coordinate generation at the tactical level**



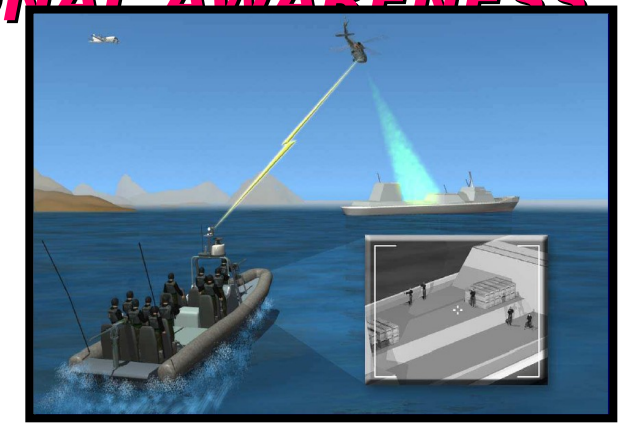
Precise targeting interface



Litening Pod Downlink

- **Sensor downlink from aircraft – "Rover"**
  - **Developed by USMC for Offensive Air Support**
  - **Provides video from aircraft/UAV sensor to ground user**
  - **Pilot understands FAC – FAC understands pilot:**

SHARED SITUATIONAL AWARENESS



Real-time Collaboration shortens kill chain

Today:
NIGHTIME CAS AT 20 MILES AWAY

- **Litening AT**
  - **AV-8B**
  - **Expeditionary F/A-18**
- **Shared Situational Awareness**
- **Night operations**

RESULTS…

- **Near-precision effects**
- **Sortie efficiency!**

Litening ISR

Kill Chain Today

- **Weapon TLE is NOT the limiting factor**
- **We use precision weapons in an imprecise way**
- **Coordinate Generation is KEY**
  - **Quality**
  - **Timing**
  - **Digital Transmission / Error avoidance**
  - **Employment**
  - **Processing time & effort**

UAVs in the Kill Chain

Must be fully plugged into C2 Net

>>> Seamless Integration

>>> Operate within Kill Chain

eagle Eye Flight Video

Efficiency

- **Sorties**
- **Risk: aircrew vs. machines**
- **Capability: persistence/duration**
- **Survivability**
- **Cost:** AV-8B = $7K/hr, Tac UAV = $300/hr
- ***IR pointer on Pioneer***

We need a 3rd tier tactical UAV: Eagle

Today: Where we are

- **What is our best PS weapon today?**

Real-time Targeting
Target Discrimination
Moving Targets
Intelligent Response
Accuracy: ±1 INCH

Today's model for precision

Today: Where we are

Today's model for precision

Tomorrow

- **Command & Control – SA & Intel**

  Sea Shield & FORCENet

  - **Networked Architecture**
  - **Interoperability**

- **Better Situational Awareness**

  – An "Internet-style" architecture for all players?

  – All users, platforms, weapons linked – *total visibility*

- **Drive down Response Time**

- ☆ **Distributed**
- ☆ **Collaborative**
- ☆ **Redundant**

Compress the kill chain

Tomorrow: Kill Chain

- Urban ops require increased precision
- **Marine on the ground needs…**
  - Sophisticated system to acquire precision coordinates
    - Image processing
    - Mensuration
  - Microburst precision data to platform & operators
  - Platform data transmitted back to man on the ground
    - Coordinates refined & transmitted

USMC will field soon with TLDHS

Tomorrow: Kill Chain

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- **Instant weapon programming**
  - Air-launched bomb
  - Missile
  - Smart artillery/naval round
- **It should all happen in an INSTANT!**
- **Simple user interfaces**
- **No voice comm**

USMC will field soon with TLDHS

Tomorrow

- **Moving/Mobile Targets**
  - Long range weapons – targets move
  - Terminal guidance updates
  - Sensor-fused weapons
  - Guidance systems that can discriminate
- Today: LGBs, Maverick, Hellfire
- Joint Common Missile technology…
- **NETWORKS**
  - "Internet" for all players – ***weapons linked in***
  - Limiting factor becomes *response time*, not accuracy

Need "tag" for mobile targets

Making the kill chain more effective

Concerns

- Joint Policy
- Joint Training
- Joint Equipment
- Joint Architecture

This is not easy…

We need your help

Tomorrow

TODAY

What we do today

Will determines the steps we take tomorrow

TOMORROW

FUSION WITHIN THE KILL CHAIN

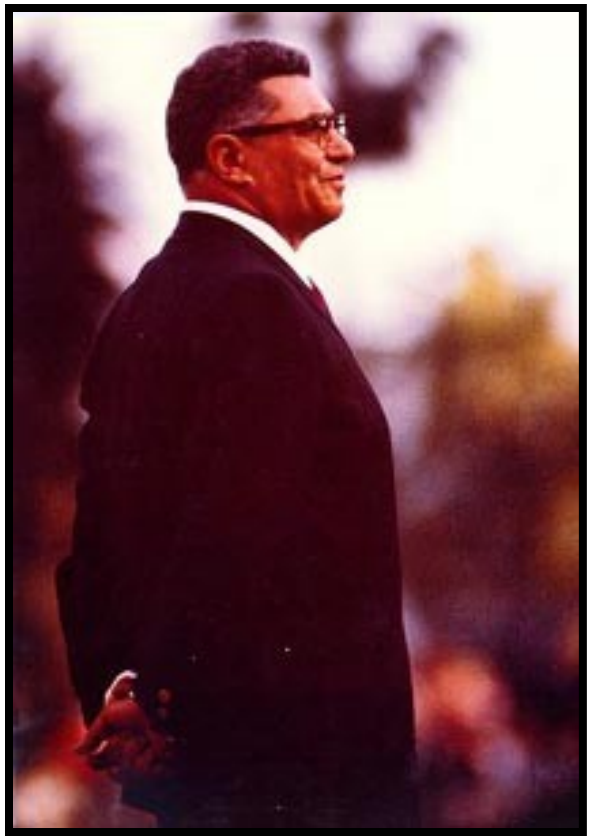
Advanced Technology

MARINES:

Our best platform

How we will make this happen

Leadership



Questions

Marine Corps Vision: 2015

EXPEDITIONARY MANEUVER WARFARE